

Work Order ID 151517

Tuesday, September 27, 2016 11:55:00 AM

151517

Page 1

Item ID: D2576-1 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Step (Casting Detail)
Start Date: 9/13/2016 Start Qty: 50.00 ***50*** Cust Item ID:
Required Date: 9/27/2016 Req'd Qty: 50.00 ***50*** Customer:
Reference:

Approvals: Process Plan: DAS 21 Date: SEP 28 2016 Tooling: _____ Date: _____ Run Start ***NR1***
QC: 9-89 Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D2576	Rev G								
100	PURCHASING	0.00							DAS 13 9-89
100									
Purchasing	Memo	0.00							
Purchasing	Issue P/O: <u>338 B</u> Cast per D2576-1 Pattern vendor: Alpine Non-Ferrous Material Release Note Required								
110	Receive & Inspect for Damage & Mat'l Certs	0.00							
110									
Packaging	Memo	0.17							
Packaging	Ensure D2576 mould is returned with the ordered parts Ensure release note is attached								
120	QC6- Inspect dimensions to drawing	0.00							
120									
QC	Memo	0.00							
Quality Control									

50SEP 30 201650x sp/6-10-1950DAS
38
9-89
OCT 25 2016

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval	
Description Work Order Deviation				Disposition				Completed By	
Root Cause				FAULT CATEGORY					
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER :							
Misidentified ☐	Past Due ☐								

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Page 2

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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	Identify as per dwg & Stock Location: LG001	0.00							DAS 6 9-29
130						50	OCT 25 2016		
Packaging	Memo	0.08							
Packaging	MAT060								
140	QC21- Final Inspection - Work Order Release	0.00							16/10/25
140									
QC	Memo	0.83							
Quality Control									

DAS
21
9-29**OCT 25 2016**

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Description Work Order Deviation		Disposition			

Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due	☐ Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter	FAULT CATEGORY ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes	☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center	☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence
☐ OTHER : _____					

Picklist Print

Tuesday, September 27, 2016 11:55:00 AM

Page 1

Work Order ID: 151517

151517

Parent Item: D2576-1

D2576-1

Parent Item Name: Step (Casting Detail)

Start Date: 9/13/2016

Required Date: 9/27/2016

Start Qty: 50.00

Required Qty: 50.00

Comments: IPP Rev: A New Issue 05-11-29 JLM
IPP rev B rev F dwg 07.07.06 EC
IPP Rev:C As per Rev G 07-09-05 JLM Verified By:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D2576-1P

Purchased

No

100

Each

0.0000

1

50

D2576-1P

Step (Casting Detail)

50x 16-10-19

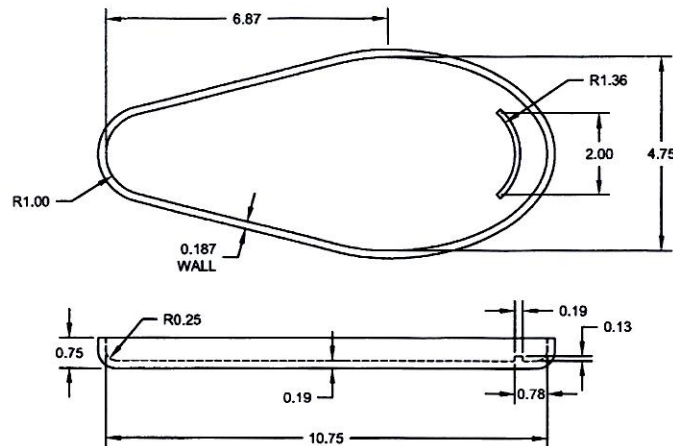
DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

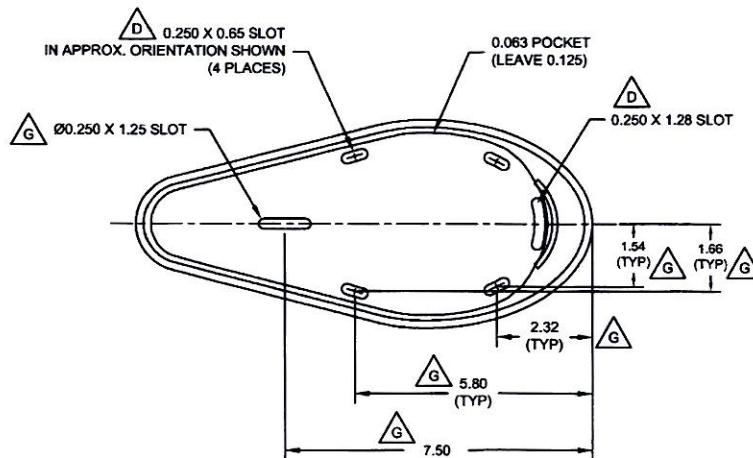
QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐							
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval			
Description Work Order Deviation				Disposition				Completed By			
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								QC / QA Coordinator Approval			
Root Cause		FAULT CATEGORY									
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐						
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Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐						
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐						
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐						
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐						
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐						
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐						
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐						
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐						
Past Expiry Date ☐	Manufacturing Process ☐	OTHER :									
Misidentified ☐	Past Due ☐										



D2576-1 CASTING



D2576-3 MACHINING DETAIL
(MAKE FROM D2576-1)

NOTES:

- 1) MATERIAL: CAST ALUMINUM ALLOY A-535.2
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.025 TO 0.050 MAX
- 6) IDENTIFICATION: NONE

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 151517 *MLJ*
1609-28

RELEASED

07.08.29

G	- CHANGE SLOTS LOCATION AND SIZE ON D2576-3 - DUE TO SKID BENDING PROGRAM CHANGES - UPDATE CNC PROGRAM	MB	07.08.15
F	7.05 WAS 6.61	PH	07.04.17
E	CHANGE 0.50 HOLE LOCATION AND ADD NOTE	RF	99.09.07
D	CHANGE SLOT SIZE AND LOCATION (TSR A1069)	CP	99.08.18
C	ADD POCKETS AND SLOTS FOR WELDING	DS	98.08.18
B	REMOVE POCKETS, ADD HOLE	DS	96.11.28
A	NEW ISSUE	DS	96.09.18
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	07.08.15		

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

DRAWING NO. D2576
REV. G
SHEET 1 OF 1
TITLE STEP
SCALE 1:3

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Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO33818**

Purchase Order Date 9/30/2016 11:37:35 AM

PO Print Date 9/30/2016

Page Number 1 of 2

Order From :

VC-ALP001

Ship To : DART AEROSPACE LTD

ALPINE NON-FERROUS FOUNDRY
8657 - 132ND STREET
SURREY, BC V3W 4P1
CA

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

E-MAILED

SEP 30 2016

Contact Name

Vendor Phone 604 596 8080

Ship To Contact

Ship To Phone

Ship Via: —

Ship Acct:

Buyer

Chantal Lavoie

Customer POID

Customer Tax #

10127-2607

Terms

Net 30

Currency

CAD

FOB

Destination-Collect

Line Nbr	Reference Vendor Part Number	Description/ Mfg ID	Req Date/ Taxable	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
	Line Comments		Promise Date				
	Delivery Comments						
1	D2576-1P	Step (Casting Detail)	10/19/2016		50.00	\$17.75	\$887.50
			Yes		Each		
			10/19/2016				
	AS PER DWG D2576 REV. G B151517						

Note:

9/30/2016

ALPINE NON-FERROUS FOUNDRY

8657-132ND STREET
SURREY, B.C. V3W 4P1
CANADA

PACKING LIST
WORK ORDER

Order No.: PO33818
Date: 30 Sep, 2016
Page: 1
Ship Date: 18 Oct, 2016

Sold To:

DART AEROSPACE

1270 ABERDEEN STREET
HAWKESBURY, ON K6A 1K7
CANADA

Ship To:

DART AEROSPACE

Order Date	Purchase Order#	Due Date	Ship Via	Page
30 Sep, 2016	PO33818	18 Oct, 2016	FEDEX	1
Item No.	Description	Ordered	Backorder quantity	Shipped quantity
DART D2576	D2576 STEP CSTG GS - GST @ 5% GST PST Exempt: #6122-5207 <i>SEP/6-10-19.</i> <i>DAS 38 9-89</i>	50	50	50
ALPINE NON-FERROUS FOUNDRY GST: #87550 0001				

Comment: Castings&Patterns are property of Alpine until paid in full

SIEMEX CORPORATION
8F, No. 110, Sec. 2, Keelung Road,
Taipei City 10695, Taiwan, R. O. C.

CERTIFICATE OF ANALYSIS

Alloy: 535.2

Heat # 10506284

	Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn
	%	%	%	%	%	%	%	%
1	0.0271	0.0528	0.00066	0.138	7.17	0.0023	0.0030	< 0.00060
2	0.0271	0.0725	0.00043	0.140	7.00	0.0023	0.0034	< 0.00060
3	0.0304	0.0799	0.00047	0.139	6.98	0.0024	0.0042	< 0.00060

	Ti	Ca	Na	Pb	Sb	Sn	Sr	Al
	%	%	%	%	%	%	%	%
1	0.145	0.00029	0.00074	0.0026	< 0.00040	< 0.00050	< 0.00010	92.5
2	0.180	0.00025	0.00035	0.0027	< 0.00040	< 0.00050	< 0.00010	92.6
3	0.228	0.00057	0.00042	0.0029	< 0.00040	0.00079	< 0.00010	92.5

DAI
38
9-8

ELEMENTS LISTED WITHOUT A RANGE, UNDER THE REQUIRED SPECIFICATIONS, ARE MAXIMUM ALLOWABLE PERCENTAGES. SAMPLES ANALYZED ON AN OPTICAL EMISSION SPECTROMETER WITH CURRENT CALIBRATION STATUS. STANDARDS ARE NIST ORE ARE TRACEABLE TO NIST.

SIEMEX CORPORATION



WARNING: THE BUYER IS ADVISED THAT THIS METAL MAY CONTAIN CREVICES AND HIDDEN RECESSES HOLDING ENTRAPPED MOISTURE. THE METAL SHOULD BE HANDLED AND PROCESSED WITH THIS POSSIBILITY IN MIND. ENTRAPPED MOISTURE MAY CAUSE AN EXPLOSION IF THE METAL IS INTRODUCED INTO A MELTING FURNACE WITHOUT PROPER DRYING.